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WATER SUPPLY OUTLOOK FOR MONTANA

Prepared by
U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Collaborating with
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
JUNE 1, 1973

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

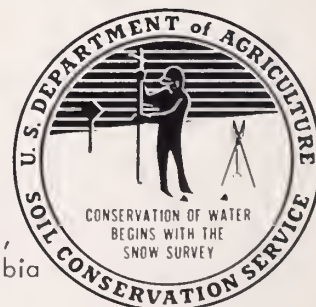
The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE | ADDRESS |
|--------------------|---|
| Alaska | 204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501 |
| Arizona | 6029 Federal Building, Phoenix, Arizona 85025 |
| Colorado (N. Mex.) | P. O. Box 17107, Denver, Colorado 80217 |
| Idaho | Room 345, 304 N. 8th. St., Boise, Idaho 83702 |
| Montana | P. O. Box 970, Bozeman, Montana 59715 |
| Nevada | P. O. Box 4850, Reno Nevada 89505 |
| Oregon | 1218 S. W. Washington St., Portland, Oregon 97205 |
| Utah | 4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111 |
| Washington | 360 U.S. Court House, Spokane, Washington 99201 |
| Wyoming | P. O. Box 2440, Casper, Wyoming 82601 |

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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|||||
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MONTANA WATER SUPPLY OUTLOOK
June 1, 1973

The mountain snowpack remains well below normal in nearly all portions of Montana. The exceptions are the headwaters of the Gallatin, Madison, and Yellowstone where snowpacks are about average. Mountain precipitation during May was below normal in many sections of the state. Spring runoff is well under way and some streams at lower elevation headwaters are receding rapidly.

West of the Continental Divide, water shortages are becoming noticeable because of below normal spring precipitation. Based on snow pillow records many streams west of the divide have reached their snowmelt peaks for this spring runoff season.

On the Missouri River drainage the snowpack is about average on the Gallatin and Madison drainages and well below average on all other drainages. This has been the prevailing situation since the first of March. Based on snow pillow records both the Madison and Jefferson should be near their snowmelt peak flows for this runoff season, while the Gallatin can be expected to peak the first part of June.

On the upper Yellowstone River drainage, snowpack is about average for this time of year with snowmelt progressing normally. Snow pillow data indicate the Yellowstone River drainage should be near its snowmelt peak for this year during the first week in June.

SOIL MOISTURE

| DRAINAGE BASIN and/or STATION | | Profile (Inches) | | Date of Survey | Soil Moisture (Inches) | | |
|-------------------------------|-----------|------------------|----------|----------------|------------------------|-----------|-----------|
| Name | Elevation | Depth | Capacity | | This Year | Last Year | Average † |

COLUMBIA RIVER BASIN

Kootenai

| | | | | | | | |
|------------------|------|----|------|------|------|------|------|
| Baree Trail | 3800 | 48 | 7.5 | | | 5.6 | 6.0 |
| Murphy Lake R.S. | 3000 | 48 | 22.6 | 6/01 | 19.6 | 20.1 | 20.8 |
| Raven | 3050 | 48 | 23.0 | | | 13.8 | 17.9 |

Flathead

| | | | | | | | |
|-----------------|------|----|-----|------|-----|-----|-----|
| Desert Mountain | 5600 | 54 | 8.4 | 5/30 | 8.7 | 8.4 | 8.9 |
| Marias Pass | 5250 | 54 | 6.5 | 5/26 | 6.4 | 8.4 | 6.1 |

Clark Fork

| | | | | | | | |
|------------------|------|----|------|------|------|------|------|
| Black Pine | 7100 | 48 | 10.0 | 6/01 | 9.0 | 8.6 | 8.6 |
| Lubrecht Forest | 4100 | 48 | 26.8 | 5/29 | 21.0 | 22.6 | - |
| Seeley Lake R.S. | 4030 | 48 | 11.9 | 6/01 | 8.6 | 11.4 | 11.0 |
| Skalkaho Summit | 7260 | 48 | 10.8 | 6/01 | 10.0 | 10.1 | 10.0 |

Bitterroot

| | | | | | | | |
|--------------|------|----|------|------|-----|-----|-----|
| Gibbons Pass | 7100 | 48 | 7.1 | 5/31 | 7.0 | 7.2 | 7.1 |
| Lolo Pass | 5250 | 48 | 10.6 | 5/31 | 9.9 | 9.8 | 9.9 |

MISSOURI RIVER BASIN

Beaverhead

| | | | | | | | |
|----------|------|----|------|------|------|------|------|
| Lakeview | 6700 | 48 | 15.3 | 6/01 | 15.8 | 15.3 | 14.9 |
|----------|------|----|------|------|------|------|------|

Madison

| | | | | | | | |
|------------------|------|----|-----|--|--|-----|-----|
| West Yellowstone | 6700 | 48 | 6.5 | | | 2.8 | 3.1 |
|------------------|------|----|-----|--|--|-----|-----|

Gallatin

| | | | | | | | |
|--------------------|------|----|------|------|------|------|------|
| Bridger Bowl | 7250 | 48 | 17.0 | 5/29 | 15.6 | 15.9 | 16.4 |
| College Site No. 2 | 4856 | 54 | 17.7 | 6/01 | 13.4 | 14.5 | 13.7 |
| Lick Creek | 6860 | 48 | 18.8 | 5/30 | 18.1 | 17.9 | 18.2 |
| Twenty-One Mile | 7150 | 48 | 10.0 | | | 9.9 | 9.9 |

Missouri Main Stem

| | | | | | | | |
|--------------|------|----|------|------|-----|------|------|
| Kings Hill | 7420 | 48 | 11.8 | 5/29 | 9.8 | 11.1 | 10.9 |
| Stemple Pass | 6350 | 48 | 5.9 | 5/31 | 4.6 | 5.2 | 5.2 |

Milk

| | | | | | | | |
|--------------|------|----|------|------|------|------|---|
| Beaver Creek | 3950 | 48 | 20.9 | 5/29 | 15.8 | 14.4 | - |
| Rocky Boy | 4700 | 36 | 10.1 | 5/29 | 10.0 | 9.6 | - |

Yellowstone

| | | | | | | | |
|--------------------|------|----|------|------|------|------|------|
| Battle Ridge | 6020 | 48 | 17.6 | 5/29 | 13.3 | 13.3 | 15.5 |
| Northeast Entrance | 7350 | 48 | 9.4 | 5/30 | 9.0 | 8.8 | 9.2 |

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

| Basin or Stream | RESERVOIR | Usable Capacity | Usable Storage | | |
|-----------------|-----------|-----------------|----------------|-----------|---------|
| | | | This Year | Last Year | Average |

COLUMBIA RIVER BASIN

| | | | | | |
|------------|--------------------|---------|---------|---------|---------|
| Kootenai | Koocanusa | 4,965.0 | 1,576.0 | 950.2 | - |
| Flathead | Hungry Horse | 3,428.0 | 2,593.0 | 1,955.0 | 2,632.0 |
| | Flathead Lake | 1,791.0 | 1,353.0 | 1,454.0 | 1,494.0 |
| | Camas (4) | 45.2 | 29.5 | 45.1 | 38.8 |
| | Mission Valley (8) | 100.3 | 27.1 | 55.8 | 63.1 |
| Clark Fork | Georgetown Lake | 31.0 | 24.0 | 25.3 | 24.2 |
| | Nevada Creek | 12.6 | - | 12.6 | 11.8 |
| | Noxon Rapids | 334.6 | 299.6 | 311.8 | 220.7 |
| Bitterroot | Como | 34.9 | - | 31.7 | 28.1 |
| | Painted Rocks | 31.7 | 14.6 | 28.1 | 32.6 |

MISSOURI RIVER BASIN

| | | | | | |
|-------------|--------------------|----------|----------|----------|----------|
| Beaverhead | Clark Canyon | 328.9 | 161.2 | 147.0 | 127.7 |
| | Lima | 84.0 | 79.1 | 63.9 | 50.9 |
| Ruby | Ruby | 38.8 | - | 37.9 | 37.3 |
| Madison | Hebgen Lake | 377.5 | 321.9 | 258.4 | 278.4 |
| | Ennis Lake | 41.0 | 35.7 | 36.7 | 35.7 |
| Gallatin | Middle Creek | 8.0 | 7.4 | 7.8 | 6.7 |
| Missouri | Canyon Ferry | 2,043.0 | 1,754.0 | 1,531.0 | 1,722.0 |
| | Hauser & Helena | 61.9 | 61.9 | 62.5 | 57.3 |
| | Lake Helena | 10.4 | 10.5 | 10.7 | 8.9 |
| | Holter Lake | 81.9 | 80.0 | 78.8 | 74.8 |
| | Smith River | 10.7 | 5.7 | 11.1 | 10.4 |
| | Bair | 7.0 | 4.5 | 7.1 | 6.4 |
| | Martinsdale | 23.1 | 14.2 | 15.2 | 15.6 |
| | Deadman's Basin | 72.2 | 52.1 | 64.0 | 57.2 |
| | Fort Peck Lake | 19,410.0 | 16,260.0 | 16,860.0 | 11,570.0 |
| Sun | Gibson | 105.0 | 80.0 | 93.8 | 94.7 |
| | Willow Creek | 32.3 | 31.7 | 31.9 | 27.6 |
| | Pishkun | 32.0 | 31.9 | 31.9 | 28.1 |
| Marias | Lower Two Medicine | 16.6 | 12.5 | 13.2 | 9.5 |
| | Four Horns | 19.2 | 13.7 | 14.1 | 12.9 |
| | Swift | 30.0 | 25.0 | 28.0 | 28.3 |
| | Lake Frances | 112.0 | 89.5 | 103.2 | 98.2 |
| | Tiber | 1,347.0 | 567.6 | 621.7 | 742.0 |
| Milk | Fresno | 127.2 | 59.6 | 125.5 | 109.5 |
| | Nelson | 66.8 | 40.3 | 49.0 | 46.9 |
| | Lake Sherburne | 66.1 | 30.2 | 17.0 | 28.3 |
| Yellowstone | Mystic Lake | 20.8 | 3.9 | 3.5 | 6.3 |
| | Tongue River | 68.0 | - | - | 35.5 |
| | Cooney | 27.5 | 19.4 | 20.2 | 16.5 |
| Big Horn | Big Horn | 1,356.0 | 996.4 | 767.3 | - |

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|---------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average |

CLARK FORK RIVER

| | | | | | | |
|---------------------|------|------|----|------|------|------|
| Black Pine | 7100 | 6/01 | 0 | 0.0 | 7.8 | 4.1 |
| Hoodoo Basin | 6000 | 5/29 | 33 | 15.8 | 63.4 | 32.9 |
| Hoodoo Basin Pillow | 6000 | 6/01 | SP | 5.5 | 61.1 | 29.4 |
| Hoodoo Creek | 5900 | 5/29 | 32 | 15.0 | 61.4 | 32.0 |
| Lookout | 5250 | 5/30 | 0 | 0.0 | 25.3 | 13.9 |
| Skalkaho Summit | 7260 | 6/01 | 1 | 0.7 | 34.0 | 16.8 |
| Stuart Mountain | 7400 | 5/30 | 14 | 6.5 | 30.6 | 18.0 |
| TV Mountain | 6800 | 5/30 | 2 | 0.7 | 19.0 | - |

BITTERROOT RIVER

| | | | | | | |
|------------------------|------|------|----|------|------|------|
| Gibbons Pass | 7100 | 5/31 | 0 | 0.0 | 19.4 | 7.6 |
| Lost Horse | 5940 | 5/30 | 14 | 6.9 | 46.0 | 18.5 |
| Saddle Mountain | 7940 | 5/31 | 21 | 9.4 | 32.2 | 18.0 |
| Saddle Mountain Pillow | 7940 | 5/31 | SP | 8.5 | 36.5 | - |
| Twin Lakes | 6510 | 5/30 | 25 | 12.0 | 60.8 | 32.2 |
| Twin Lakes Pillow | 6400 | 5/30 | SP | 9.2 | 57.9 | - |

SP - Snow pillow observation - water content only.

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|---------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average |

MISSOURI RIVER BASIN

JEFFERSON RIVER

| | | | | | | |
|--------------------|------|------|----|-----|------|---|
| Rocker Peak | 8000 | 5/29 | 10 | 3.4 | 13.4 | - |
| Rocker Peak Pillow | 8000 | 5/29 | SP | 8.7 | 17.7 | - |

MADISON RIVER

| | | | | | | |
|-------------------------|------|------|----|------|------|-----|
| Black Bear | 7950 | 5/31 | 48 | 25.7 | 34.2 | - |
| Black Bear Pillow | 7950 | 5/31 | SP | 21.8 | 31.6 | - |
| Madison Plateau | 7750 | 5/31 | 14 | 5.8 | 8.0 | - |
| Madison Plateau Pillow | 7750 | 5/31 | SP | 4.1 | 8.1 | - |
| West Yellowstone Pillow | 6700 | 5/31 | SP | 0.0 | 0.0 | 0.0 |
| Whiskey Creek | 6800 | 5/31 | 0 | 0.0 | 0.0 | - |
| Whiskey Creek Pillow | 6800 | 5/31 | SP | 0.0 | 0.0 | - |

GALLATIN RIVER

| | | | | | | |
|----------------------|------|------|----|------|------|------|
| Arch Falls | 7350 | 5/30 | 28 | 11.0 | 3.4 | 8.9 |
| Bridger Bowl | 7250 | 5/29 | 42 | 18.6 | 22.4 | 20.8 |
| Bridger Bowl Pillow | 7250 | 5/29 | SP | 16.0 | 15.9 | 15.3 |
| Devils Slide | 8100 | 5/30 | 52 | 20.7 | 20.0 | 23.0 |
| Hood Meadow | 6600 | 5/30 | 0 | 0.0 | 0.0 | 2.4 |
| Lick Creek | 6860 | 5/30 | 0 | 0.0 | 0.0 | 0.0 |
| Lick Creek Pillow | 6860 | 5/30 | SP | 0.0 | 0.0 | 0.0 |
| Maynard Creek | 6210 | 5/29 | 3 | 0.9 | 0.0 | 5.6 |
| Maynard Creek Pillow | 6210 | 5/29 | SP | 2.2 | 0.0 | 4.8 |
| Shower Falls | 8100 | 5/30 | 56 | 23.7 | 22.7 | 25.6 |
| Shower Falls Pillow | 8100 | 5/30 | SP | 23.1 | 19.0 | 22.2 |

MISSOURI RIVER (Main Stem)

| | | | | | | |
|----------------------|------|------|----|-----|------|------|
| Deadman Creek | 6450 | 5/29 | 0 | 0.0 | 0.0 | 0.0 |
| Deadman Creek Pillow | 6450 | 5/29 | SP | 0.0 | 0.0 | 0.0 |
| Kings Hill | 7500 | 5/29 | 14 | 4.8 | 13.9 | 10.3 |

JUDITH RIVER

| | | | | | | |
|------------------|------|------|----|-----|------|------|
| Spur Park | 8100 | 5/29 | 15 | 5.8 | 25.1 | 19.5 |
| Spur Park Pillow | 8100 | 5/29 | SP | 7.0 | 25.6 | 18.5 |

UPPER YELLOWSTONE RIVER

| | | | | | | |
|---------------------------|------|------|----|------|------|------|
| Cooke Station | 8150 | 5/30 | 19 | 7.3 | 15.5 | 10.9 |
| Fisher Creek | 9100 | 5/30 | 68 | 29.6 | 47.6 | 33.5 |
| Fisher Creek Pillow | 9100 | 5/30 | SP | 26.5 | 43.4 | 30.6 |
| Northeast Entrance | 7400 | 5/30 | 0 | 0.0 | 0.0 | 0.4 |
| Northeast Entrance Pillow | 7350 | 5/30 | SP | 0.0 | 0.0 | 0.0 |
| White Mill | 8700 | 5/30 | 46 | 19.2 | 34.4 | 22.7 |

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|---------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average |

SUPPLEMENTAL MEASUREMENTS 1973

JANUARY 1

| | | | | | | |
|----------------------|------|-------|----|------|------|-----|
| Banfield Mountain | 5600 | 1/10 | 38 | 10.2 | - | - |
| Bristow Creek | 3900 | 1/10 | 16 | 4.3 | - | - |
| Cedar Grove | 4100 | 1/11 | 9 | 2.5 | - | - |
| Davis Creek | 5400 | 1/09 | 42 | 12.8 | - | - |
| Garver Creek | 4250 | 1/09 | 20 | 5.9 | - | - |
| Hawkins Lake | 6450 | 1/09 | 52 | 16.2 | - | - |
| Hebgen Dam | 6550 | 1/03 | 25 | 4.1 | 6.6 | 4.5 |
| Lake Creek | 6100 | 1/11 | 19 | 3.0 | - | - |
| Lost Soul | 4800 | 1/10 | 30 | 7.6 | - | - |
| Northeast Entrance | 7400 | 12/31 | 18 | 2.7 | 5.4 | 3.5 |
| North Fork Elk Creek | 6250 | 1/02 | 23 | 4.8 | 10.1 | - |
| Poorman Creek | 5100 | 1/11 | 43 | 13.6 | - | - |
| Rocky Boy | 4700 | 12/27 | 2 | 0.3 | 0.7 | - |
| Tepee Creek | 8000 | 1/11 | 29 | 6.4 | - | - |
| White Mill | 8700 | 1/02 | 45 | 12.2 | 17.0 | - |

FEBRUARY 1

| | | | | | | |
|-------------------|------|------|----|------|------|---|
| Carrot Basin | 9000 | 1/31 | 72 | 22.9 | 33.1 | - |
| Frohner Meadows | 6480 | 2/02 | 18 | 3.6 | - | - |
| Picket Pin Lower | 6200 | 2/03 | 8 | 1.8 | - | - |
| Picket Pin Middle | 7250 | 2/03 | 23 | 6.1 | - | - |
| Picket Pin Upper | 8100 | 2/03 | 40 | 11.1 | - | - |
| West Rosebud | 7500 | 1/30 | 27 | 6.4 | 12.6 | - |

MARCH 1

| | | | | | | |
|--------------|------|------|----|-----|-----|-----|
| Carter Creek | 7400 | 3/01 | 20 | 4.0 | 6.1 | 3.8 |
|--------------|------|------|----|-----|-----|-----|

MAY 15

| | | | | | | |
|---------------------|------|------|----|------|------|------|
| Hell Roaring Divide | 5770 | 5/21 | 23 | 10.7 | 43.4 | 27.5 |
|---------------------|------|------|----|------|------|------|

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|---------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average |

CORRECTIONS TO PREVIOUSLY PUBLISHED 1973 DATA

JANUARY 1

| | | | | | | |
|--------------------|------|-------|----|------|------|-----|
| Black Bear | 7950 | 12/29 | 55 | 14.6 | - | - |
| Chessman Reservoir | 6200 | 12/29 | 4 | 0.8 | 3.4 | 1.4 |
| Lakeview Canyon | 6930 | 12/29 | 18 | 2.7 | 10.3 | 4.6 |
| Storm Lake | 7780 | 1/02 | 37 | 5.1 | 5.7 | 5.5 |
| Ten Mile Lower | 6600 | 12/27 | 11 | 2.4 | 4.8 | 2.8 |
| Ten Mile Middle | 6800 | 12/27 | 20 | 3.6 | 7.4 | 4.3 |
| Whiskey Creek | 6800 | 12/29 | 32 | 7.1 | - | - |

FEBRUARY 1

| | | | | | | |
|--------------------|------|------|----|-----|------|------|
| Chessman Reservoir | 6200 | 1/30 | 8 | 1.7 | 6.6 | 2.6 |
| Marias Pass | 5250 | 1/26 | 26 | 6.0 | 19.8 | 12.1 |
| Picnic Grounds | 6500 | 1/31 | 11 | 1.6 | 6.0 | 3.1 |
| Southern Cross | 6500 | 1/31 | 12 | 2.2 | 7.8 | 4.4 |
| Ten Mile Lower | 6600 | 1/29 | 18 | 3.6 | 8.6 | 4.6 |
| Ten Mile Middle | 6800 | 1/29 | 27 | 5.1 | 12.1 | 6.9 |
| Ten Mile Upper | 8000 | 1/29 | 28 | 5.6 | 14.1 | 8.8 |
| Twenty-One Mile | 7150 | 1/30 | 39 | 9.6 | 16.0 | 11.9 |
| West Yellowstone | 6700 | 1/30 | 31 | 6.8 | 12.2 | 7.4 |

MARCH 1

| | | | | | | |
|-------------------|------|------|----|------|------|------|
| Camp Senia | 7890 | 2/26 | 16 | 5.1 | 6.9 | 4.8 |
| Copper Mountain | 7700 | 3/01 | 29 | 7.2 | 12.1 | 8.4 |
| Elk Horn Springs | 7800 | 3/01 | 22 | 4.4 | 12.9 | 8.4 |
| Goat Mountain | 7000 | 3/03 | 22 | 5.2 | - | 10.2 |
| Hebgen Dam | 6550 | 2/27 | 31 | 8.2 | 12.6 | 10.0 |
| Holbrook | 4530 | 2/28 | 13 | 3.8 | 17.7 | 9.9 |
| Hudson Bay Divide | 5800 | 2/27 | 34 | 10.2 | 27.8 | 16.3 |
| Independence | 7850 | 3/02 | 36 | 10.6 | 19.2 | 14.1 |
| Middle Mill Creek | 7850 | 3/02 | 36 | 9.4 | 17.4 | - |
| Mineral Creek | 4000 | 3/01 | 35 | 11.7 | 22.3 | 19.1 |
| Monument Peak | 8800 | 3/02 | 47 | 15.2 | 25.7 | 20.0 |
| Picket Pin Middle | 7250 | 3/05 | 21 | 6.6 | 19.4 | - |
| Picnic Grounds | 6500 | 2/28 | 12 | 2.1 | 6.4 | 4.0 |
| Rock Creek | 5600 | 3/01 | 24 | 6.4 | 7.8 | 7.5 |
| Timberline Creek | 8850 | 2/26 | 36 | 9.2 | 18.0 | 11.5 |
| West Yellowstone | 6700 | 2/27 | 32 | 8.0 | 14.7 | 9.8 |
| Wrong Ridge | 6800 | 3/01 | 33 | 9.5 | 29.0 | 19.4 |

SNOW

| DRAINAGE BASIN and/or SNOW COURSE | | THIS YEAR | | | PAST RECORD | |
|-----------------------------------|-----------|----------------|---------------------|------------------------|------------------------|---------|
| | | Date of Survey | Snow Depth (Inches) | Water Content (Inches) | Water Content (inches) | |
| NAME | Elevation | | | | Last Year | Average |

CORRECTIONS TO PREVIOUSLY PUBLISHED 1973 DATA (Continued)

APRIL 1

| | | | | | | |
|-----------------------|------|------|----|------|------|------|
| Bots Sots | 8000 | 4/02 | 56 | 11.2 | - | - |
| Chessman Reservoir | 6200 | 4/03 | 19 | 4.3 | 3.8 | 4.2 |
| Camp Senia | 7890 | 4/02 | 47 | 9.7 | 9.2 | 6.4 |
| Elk Horn Springs | 7800 | 3/30 | 28 | 5.9 | 14.9 | 9.8 |
| Intergaard | 6450 | 3/31 | 29 | 7.2 | 13.5 | 8.5 |
| Kings Hill | 7500 | 3/30 | 36 | 8.5 | 21.0 | 13.2 |
| Marias Pass | 5250 | 3/27 | 42 | 10.9 | 29.4 | 18.8 |
| Mineral Creek | 4000 | 4/01 | 35 | 11.9 | 26.6 | 21.4 |
| Nez Perce Creek | 6500 | 3/30 | 22 | 5.6 | 7.9 | - |
| North Fork Jocko | 6330 | 3/29 | 83 | 32.3 | 65.5 | 47.2 |
| Southern Cross | 6500 | 3/31 | 20 | 5.6 | 8.5 | 7.4 |
| Spotted Bear Mountain | 7000 | 4/03 | 30 | 10.8 | 21.0 | 15.1 |
| Stemple Pass | 6600 | 4/03 | 29 | 6.8 | 16.4 | 10.8 |
| Ten Mile Middle | 6800 | 4/02 | 42 | 9.7 | 16.6 | 10.8 |
| Timberline Creek | 8850 | 4/02 | 73 | 15.3 | 23.8 | 15.5 |

MAY 1

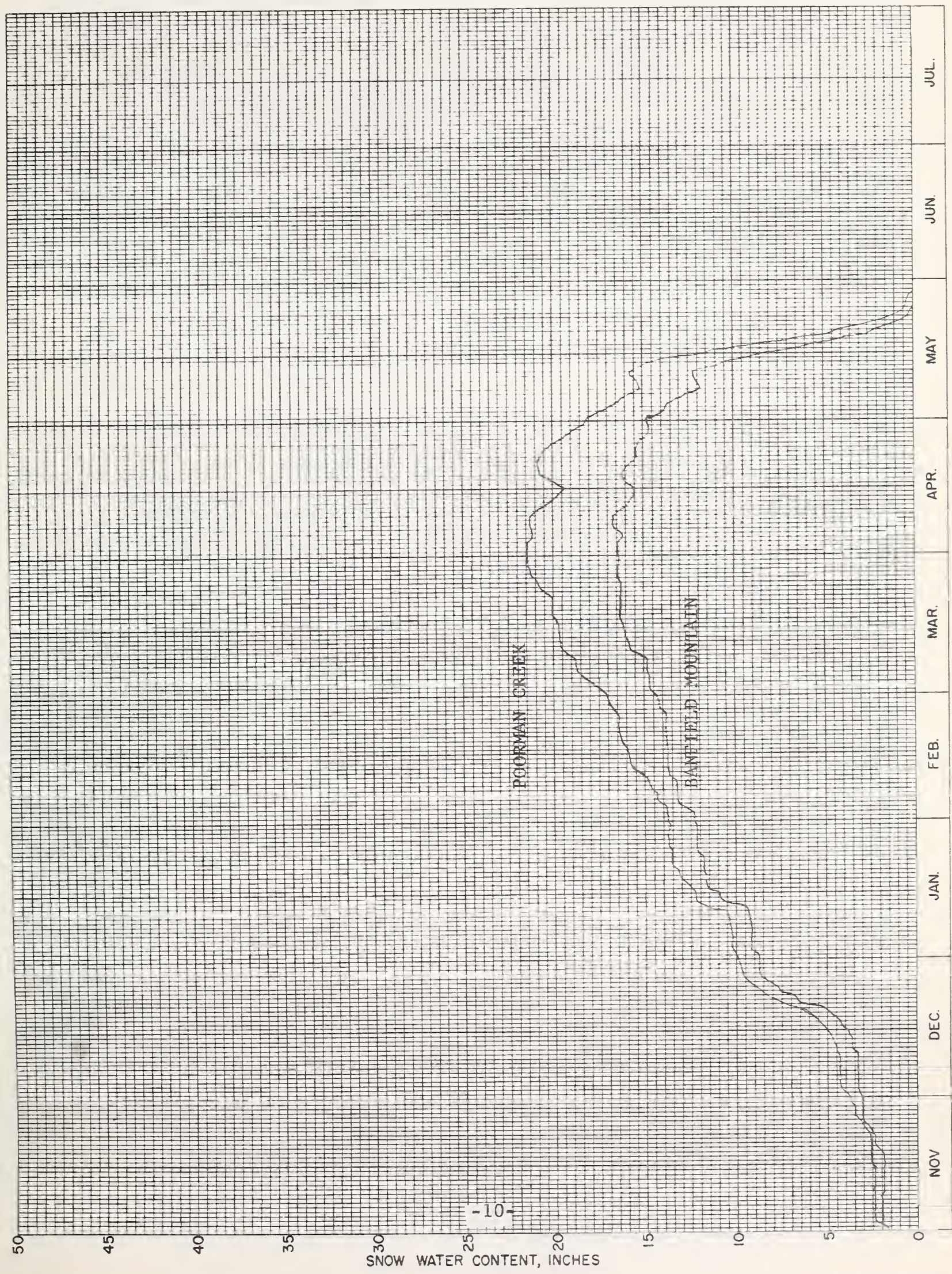
| | | | | | | |
|------------------|------|------|----|------|------|------|
| Elk Horn Springs | 7800 | 5/02 | 21 | 6.3 | 15.1 | 9.2 |
| Heart Lake Trail | 4800 | 5/01 | 5 | 1.6 | 38.7 | 17.2 |
| Hebgen Dam | 6550 | 5/01 | 18 | 6.2 | 6.8 | 5.8 |
| Kings Hill | 7500 | 4/30 | 45 | 12.8 | 23.2 | 14.7 |
| Marias Pass | 5250 | 4/26 | 24 | 7.2 | 31.4 | 18.7 |
| Picket Pin Upper | 8100 | 5/02 | 93 | 25.9 | 30.2 | - |
| Ten Mile Lower | 6600 | 5/01 | 23 | 7.4 | 6.7 | 5.3 |
| Ten Mile Middle | 6800 | 5/01 | 37 | 11.4 | 17.3 | 11.6 |
| Twenty-One Mile | 7150 | 5/01 | 36 | 10.6 | 23.4 | 16.0 |

MAY 15

| | | | | | | |
|-----------|------|------|----|------|---|---|
| Bots Sots | 8000 | 5/16 | 41 | 15.0 | - | - |
|-----------|------|------|----|------|---|---|

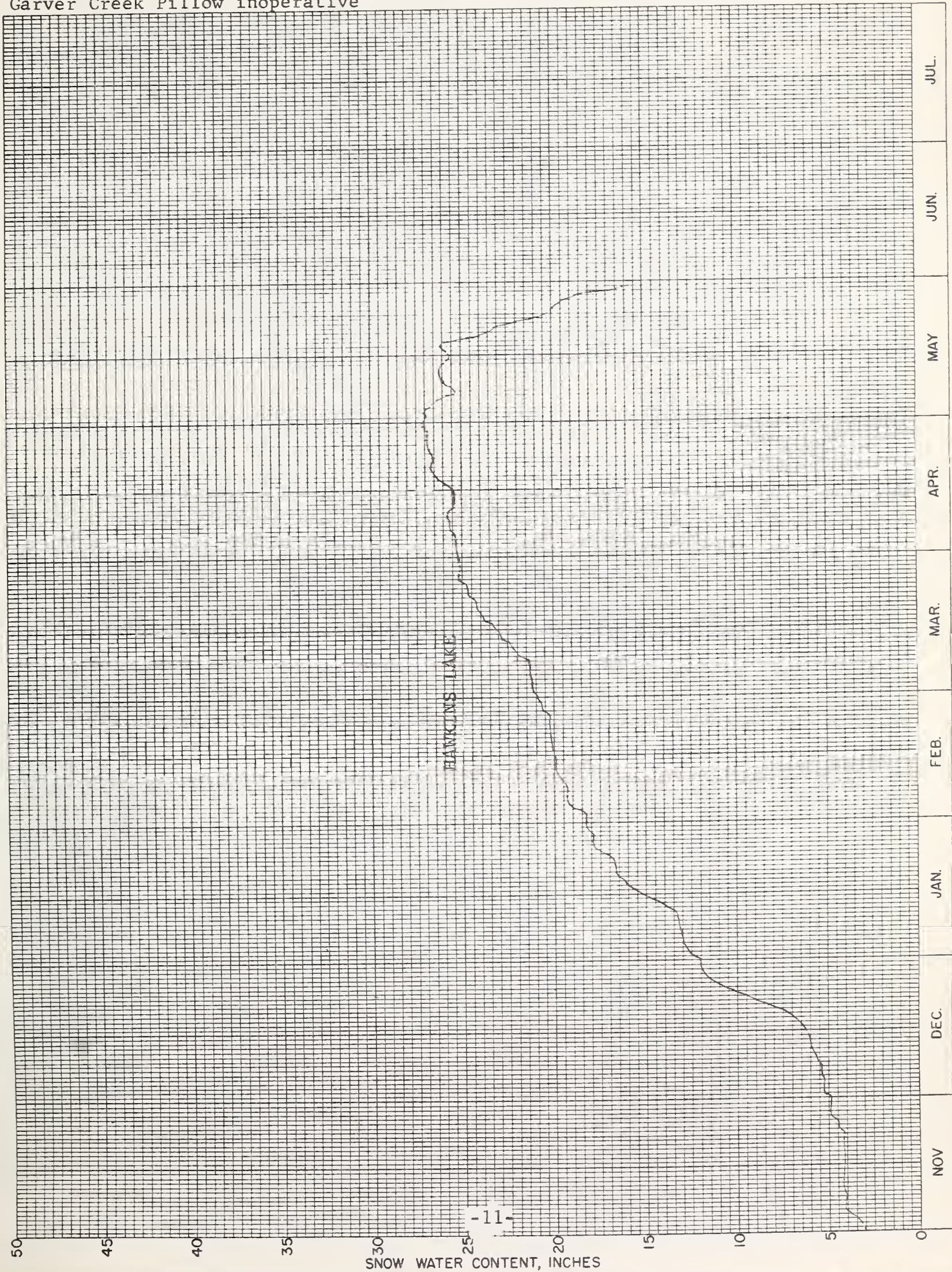
SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage KOOTENAI



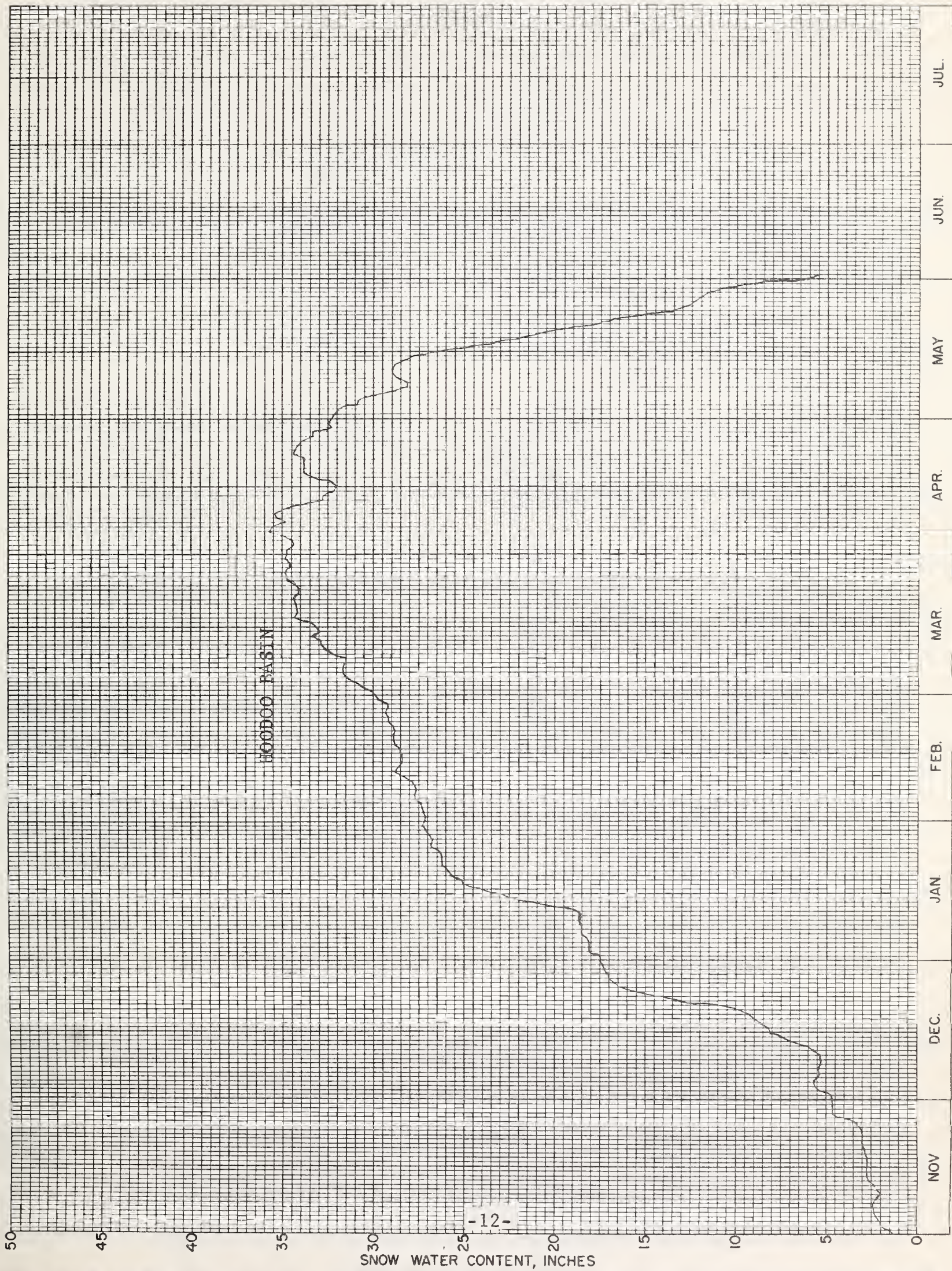
SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage: KOOTENAI
Garver Creek Pillow inoperative



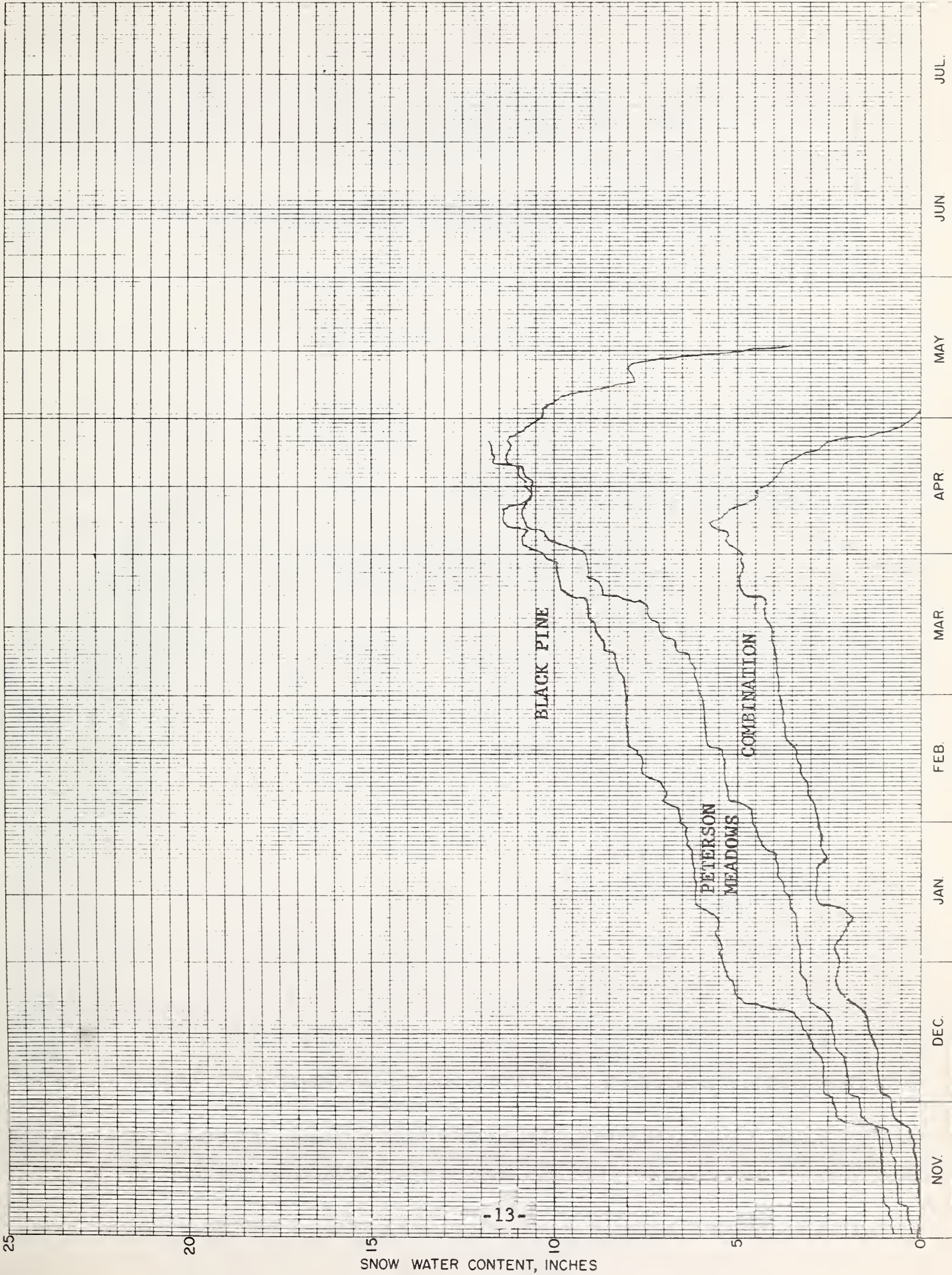
SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage CLARK FORK



SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage. CLARK FORK

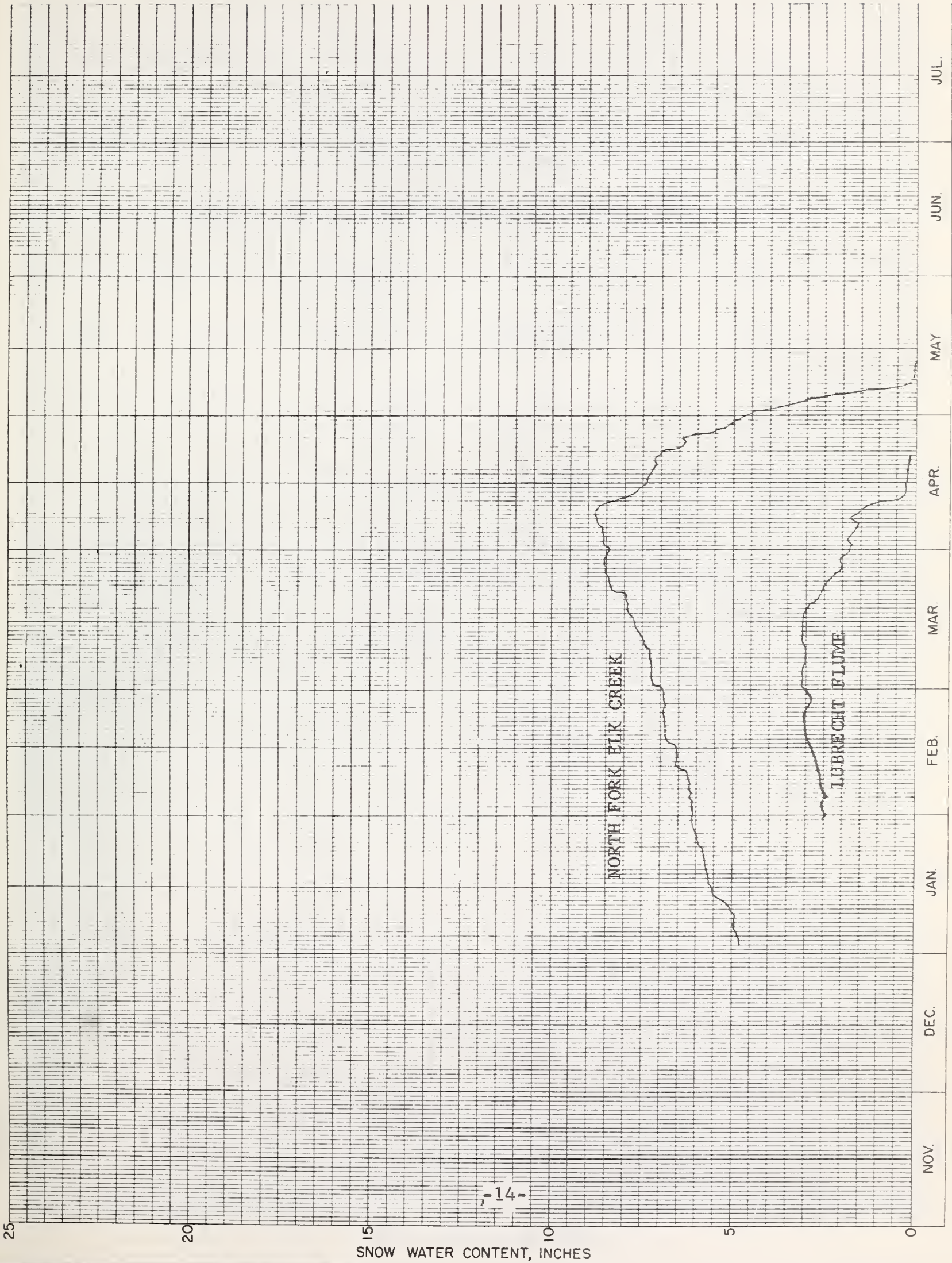


SNOW PILLOW DATA
WATER YEAR 1973

No. _____

Elev. _____

Drainage. BLACKFOOT



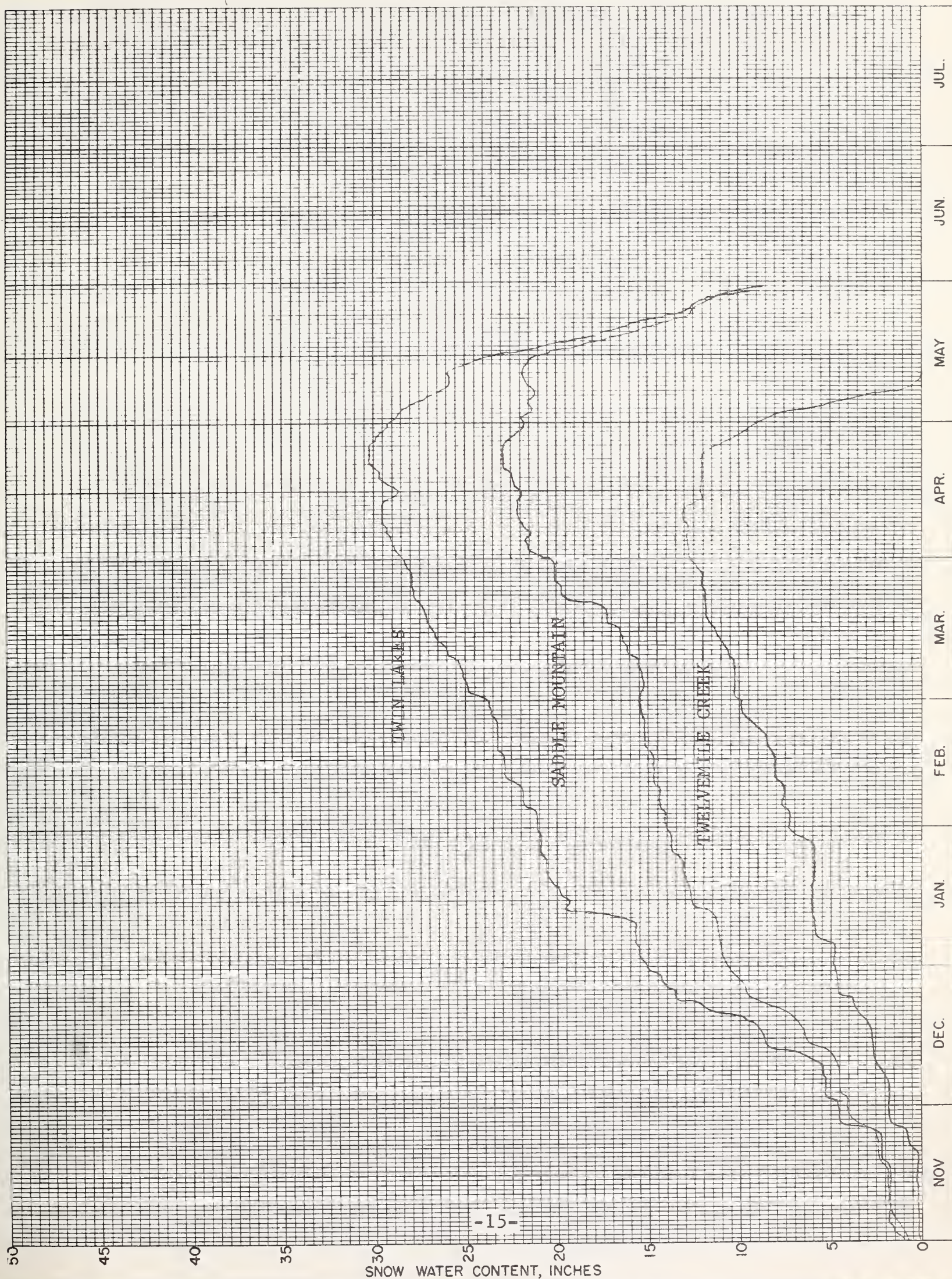
SNOW PILLOW DATA WATER YEAR 1973

No. _____

Elev. _____

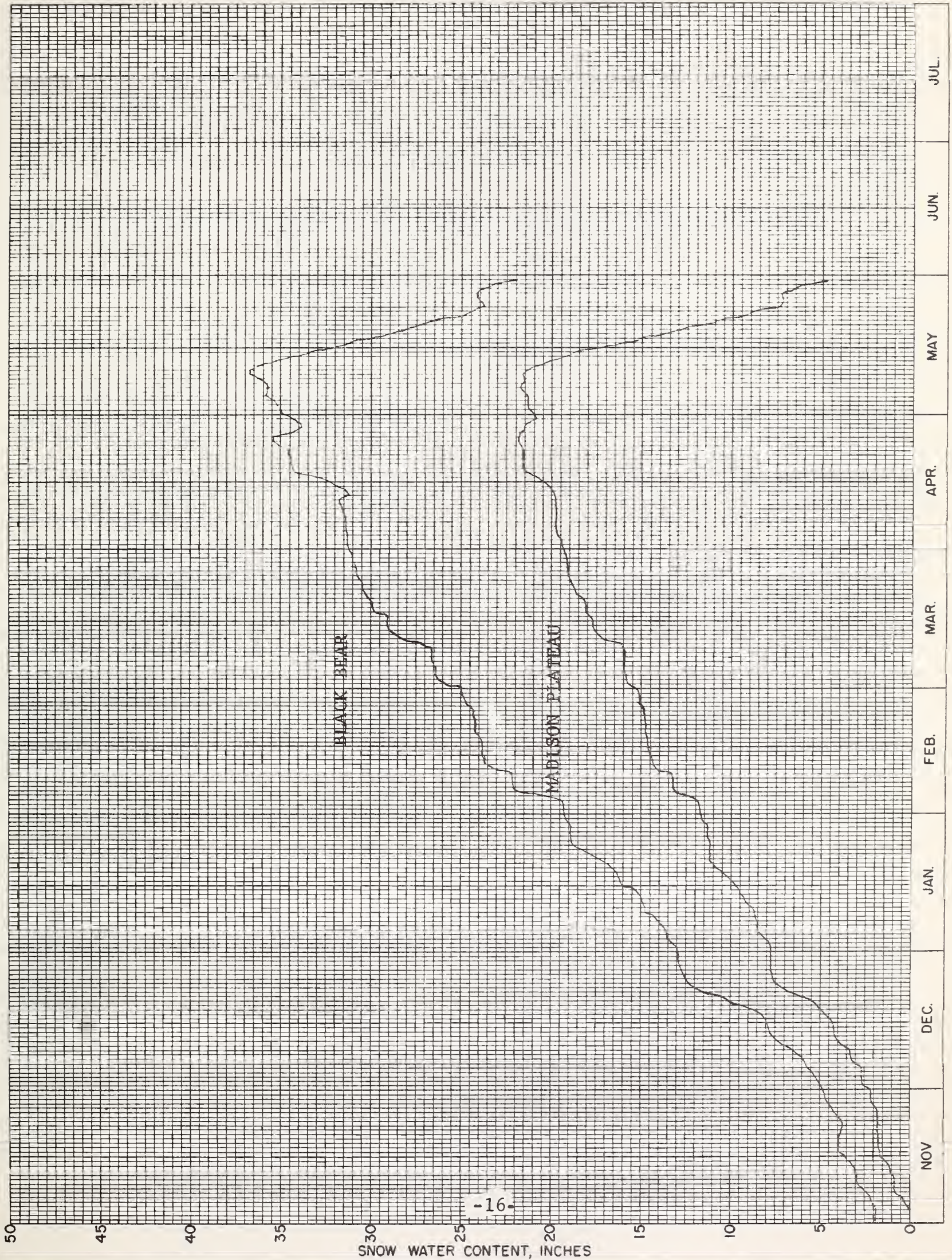
Drainage: _____

BITTERROOT



SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage: MADISON



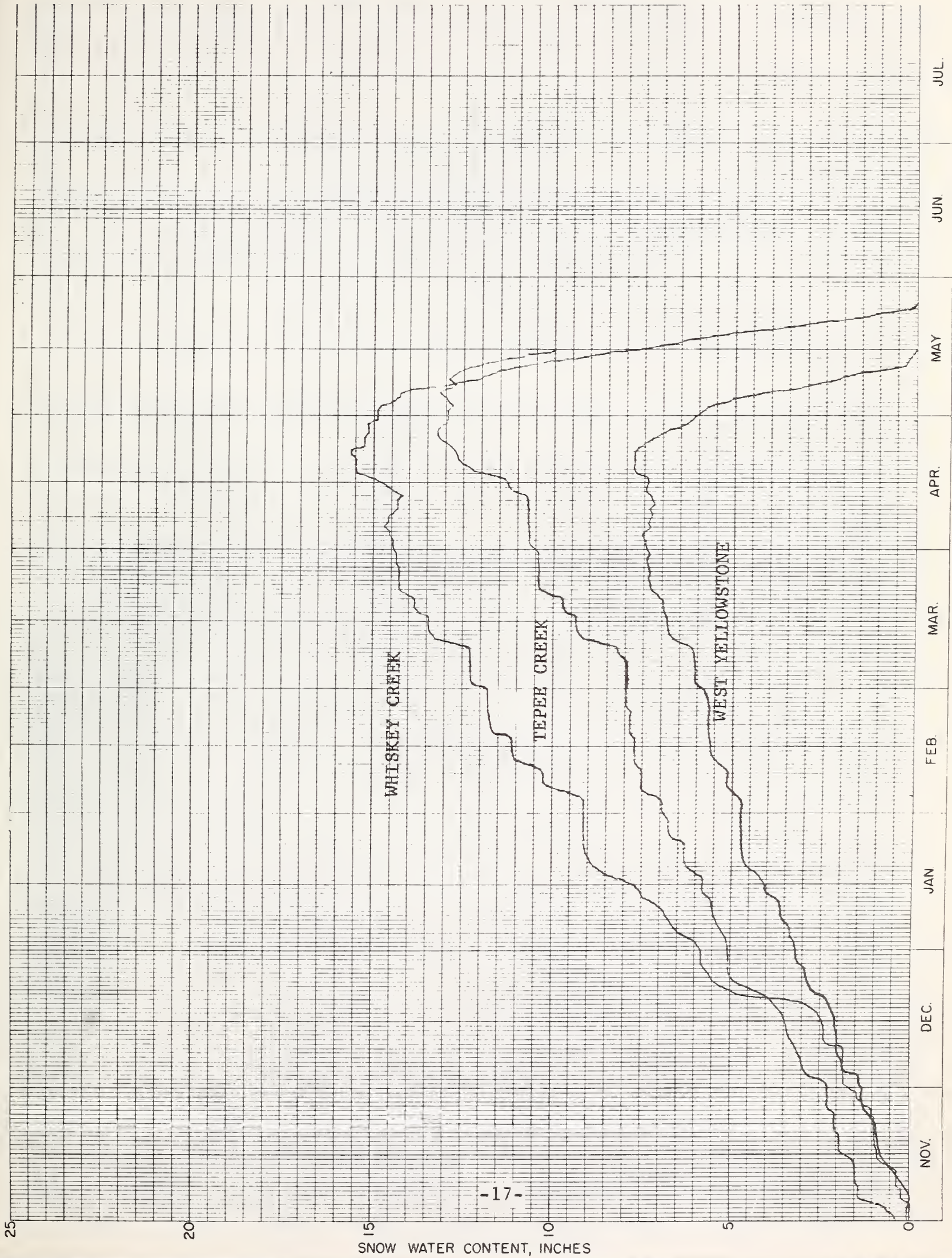
SNOW PILLOW DATA
WATER YEAR 1973

No.

Elev.

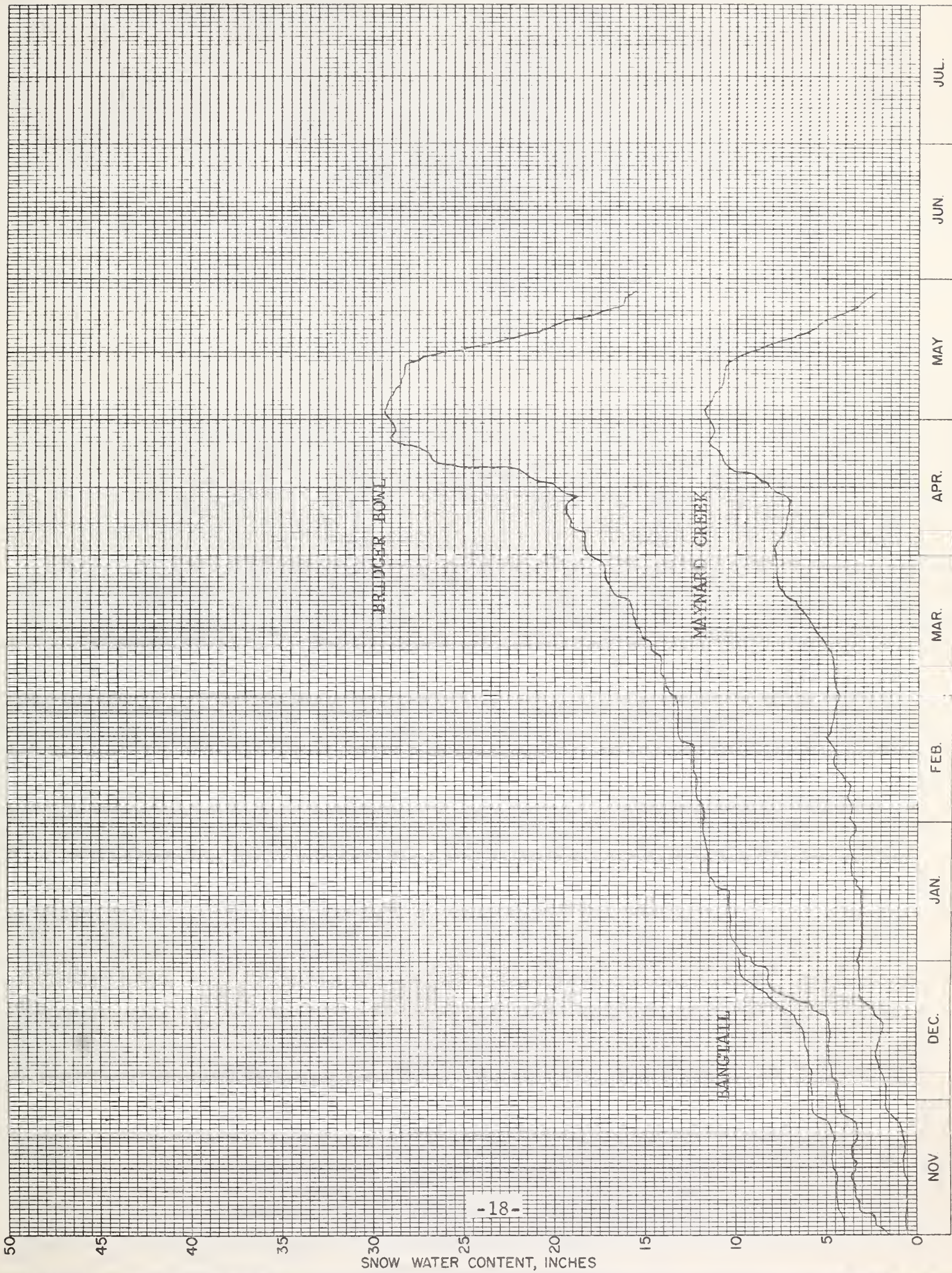
Drainage.

MADISON



SNOW PILLOW DATA
WATER YEAR 1973

No. _____ Elev. _____ Drainage _____ GALLATIN

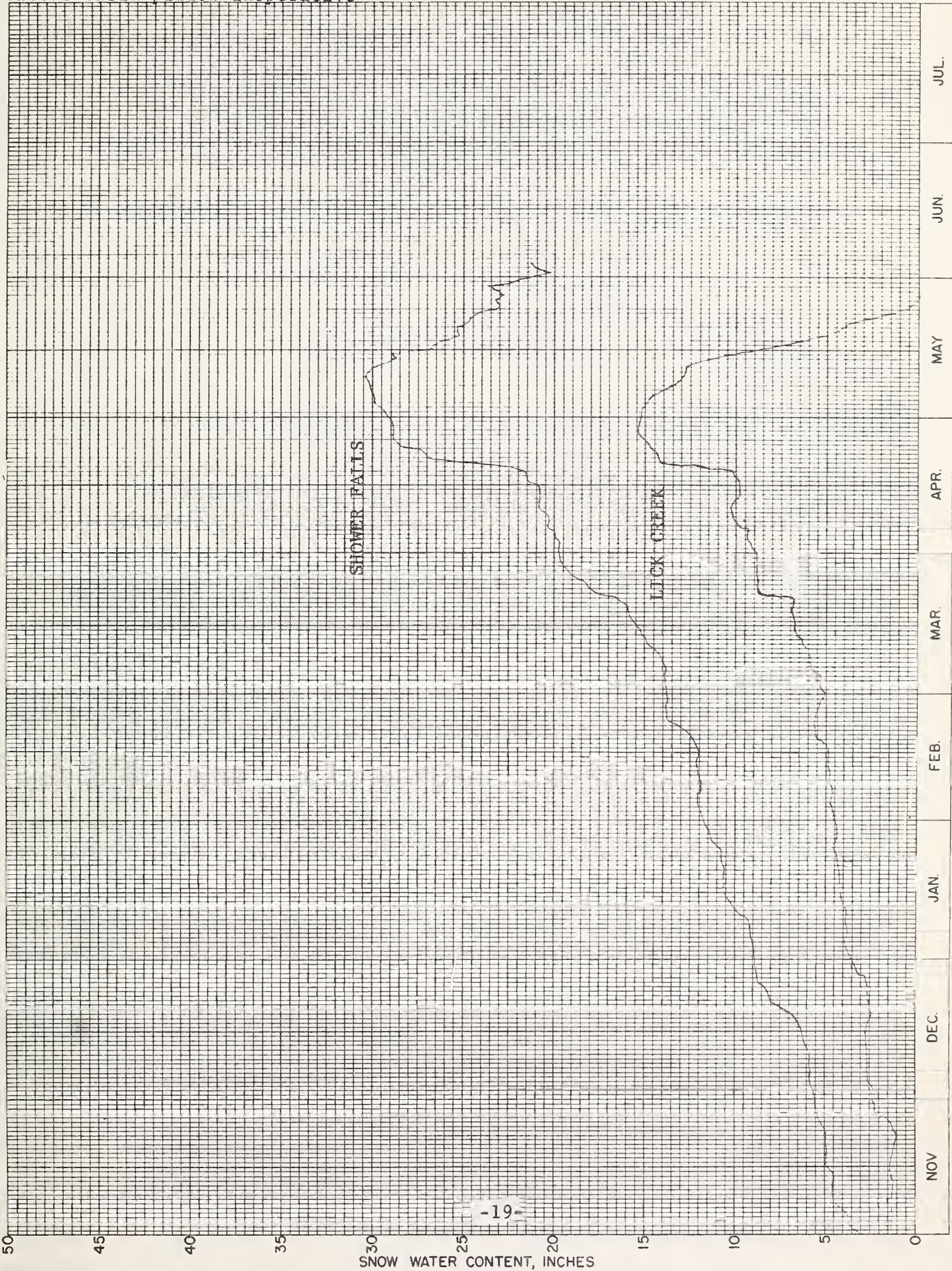


-18-

SNOW PILLOW DATA
WATER YEAR 1973

GALLATIN

No. _____ Elev. _____
Carrot Basin pillow inoperative

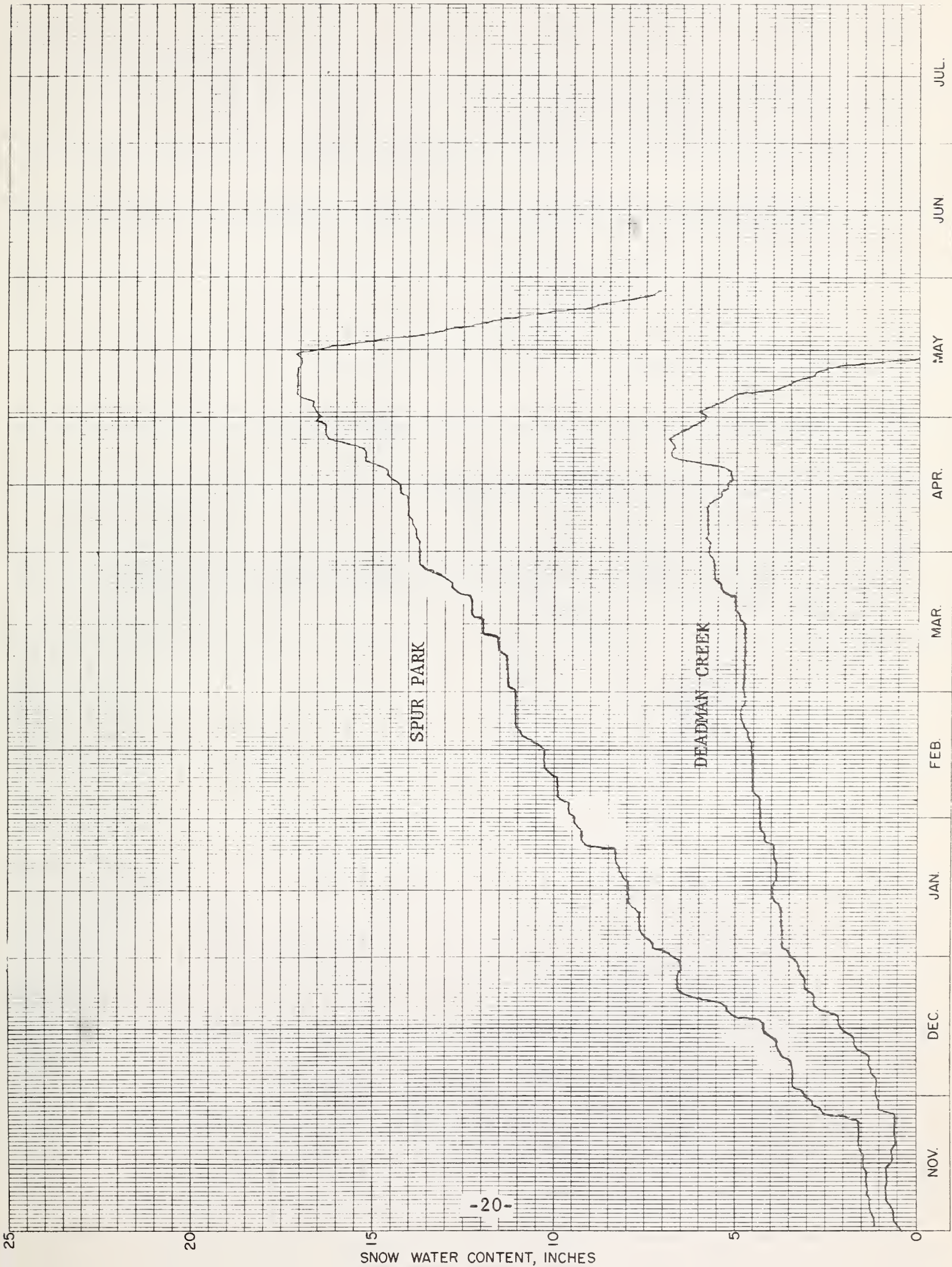


SNOW PILLOW DATA
WATER YEAR 1973

No. _____

Elev. _____

Drainage. JUDITH-JEFFERSON-MISSOURI

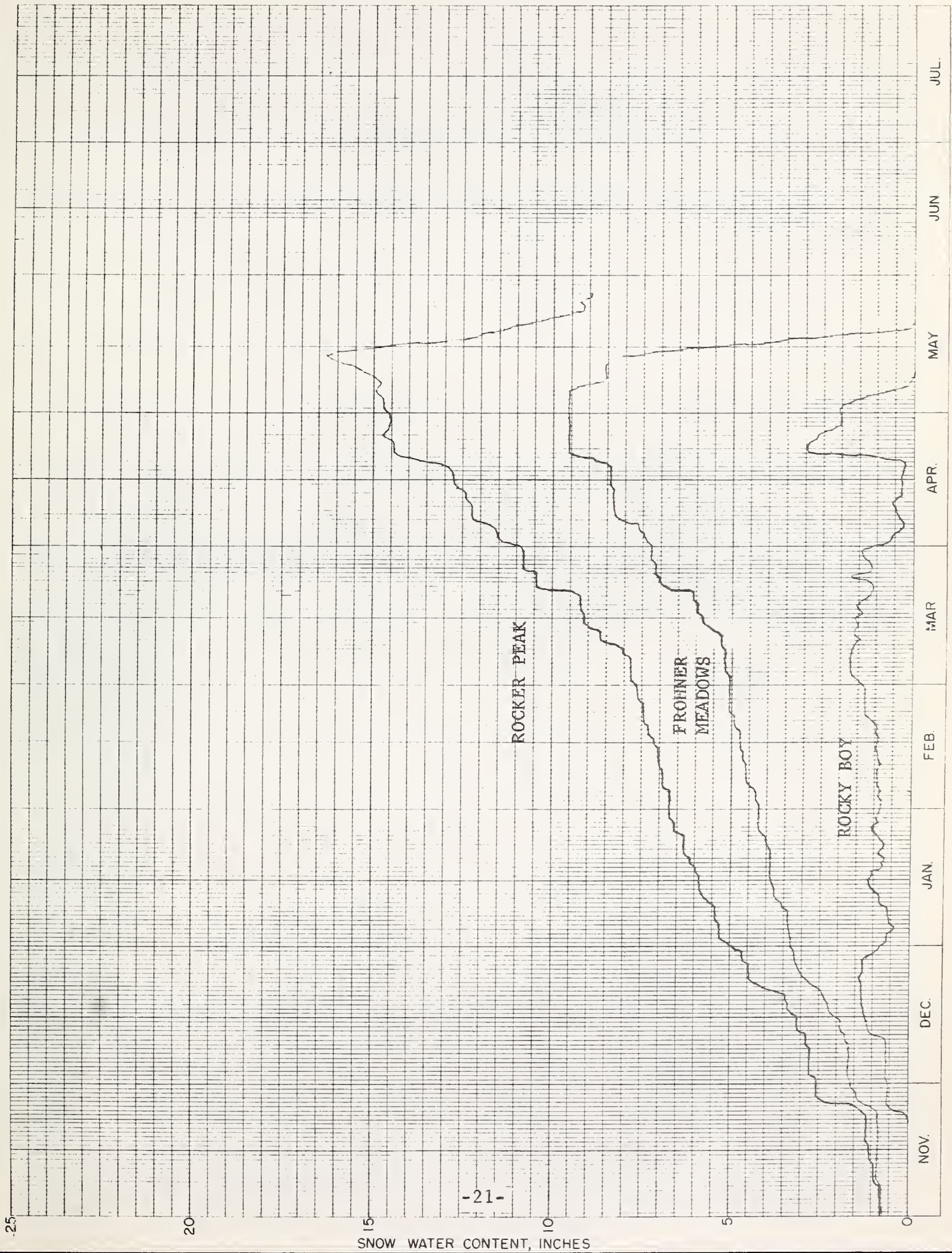


SNOW PILLOW DATA
WATER YEAR 1973

No. _____

Elev. _____

Drainage. JEFFERSON-MISSOURI-MILK



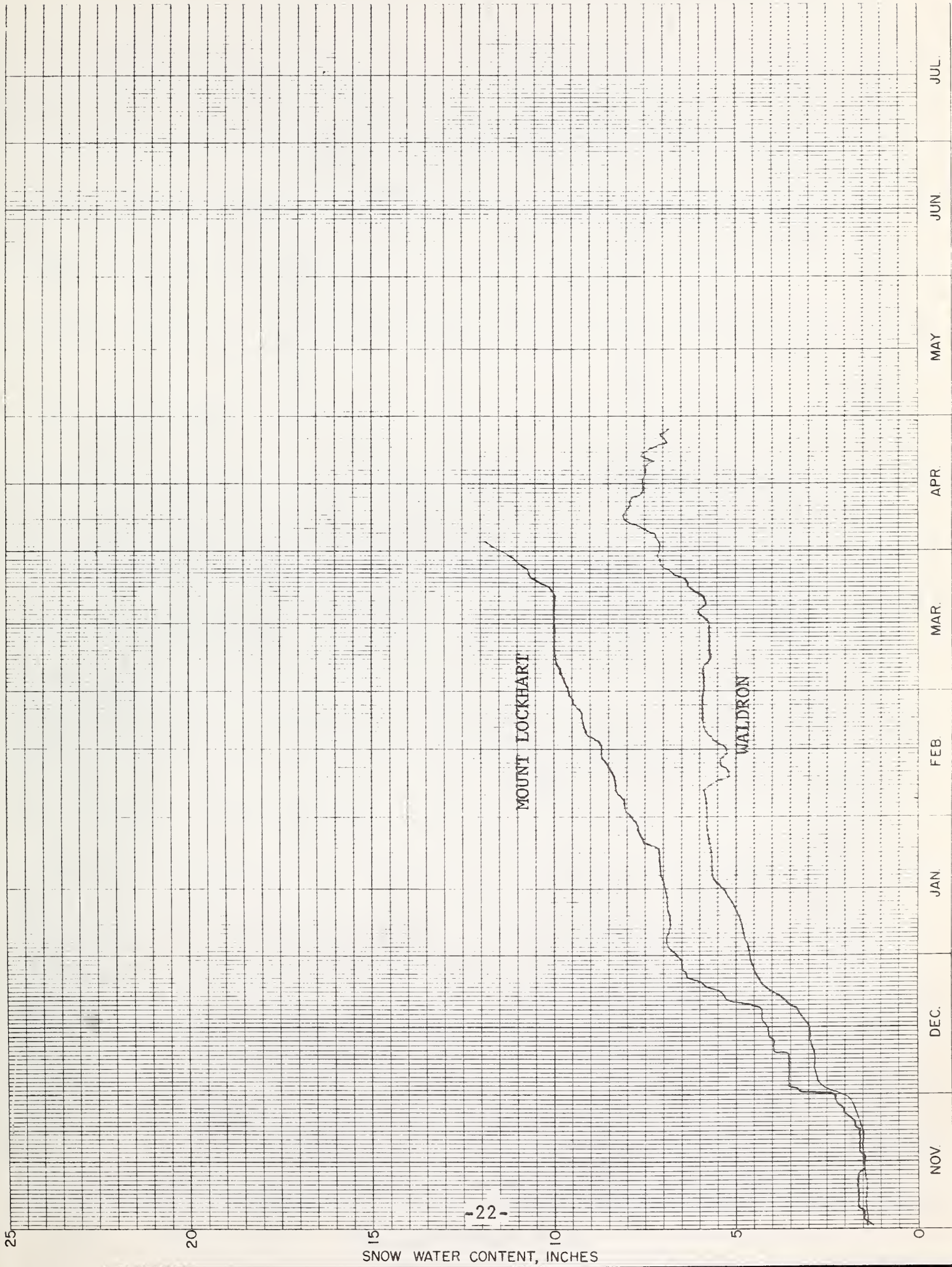
SNOW PILLOW DATA
WATER YEAR 1973

No.

Elev.

Drainage.

SUN-TETON



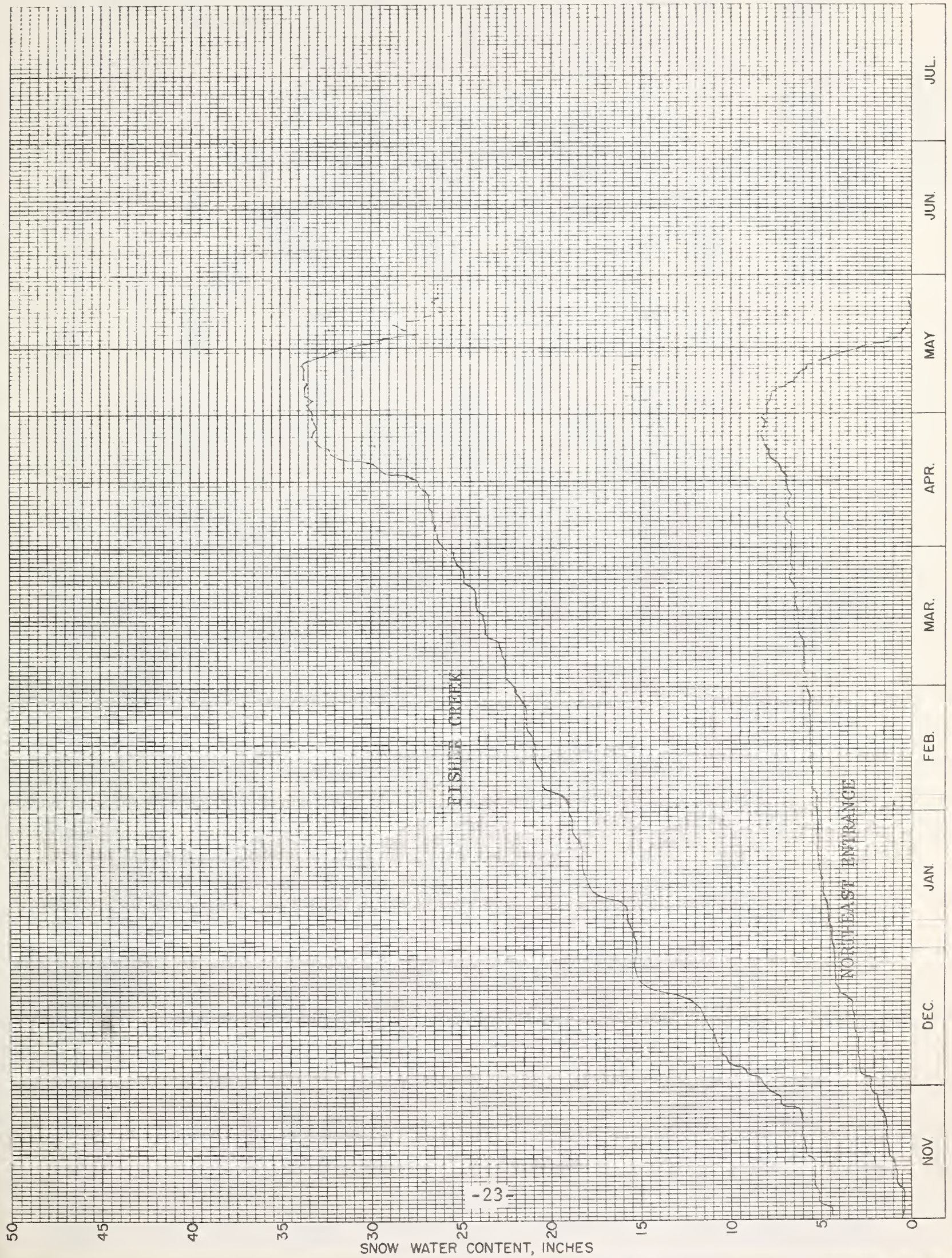
SNOW PILLOW DATA
WATER YEAR 1973

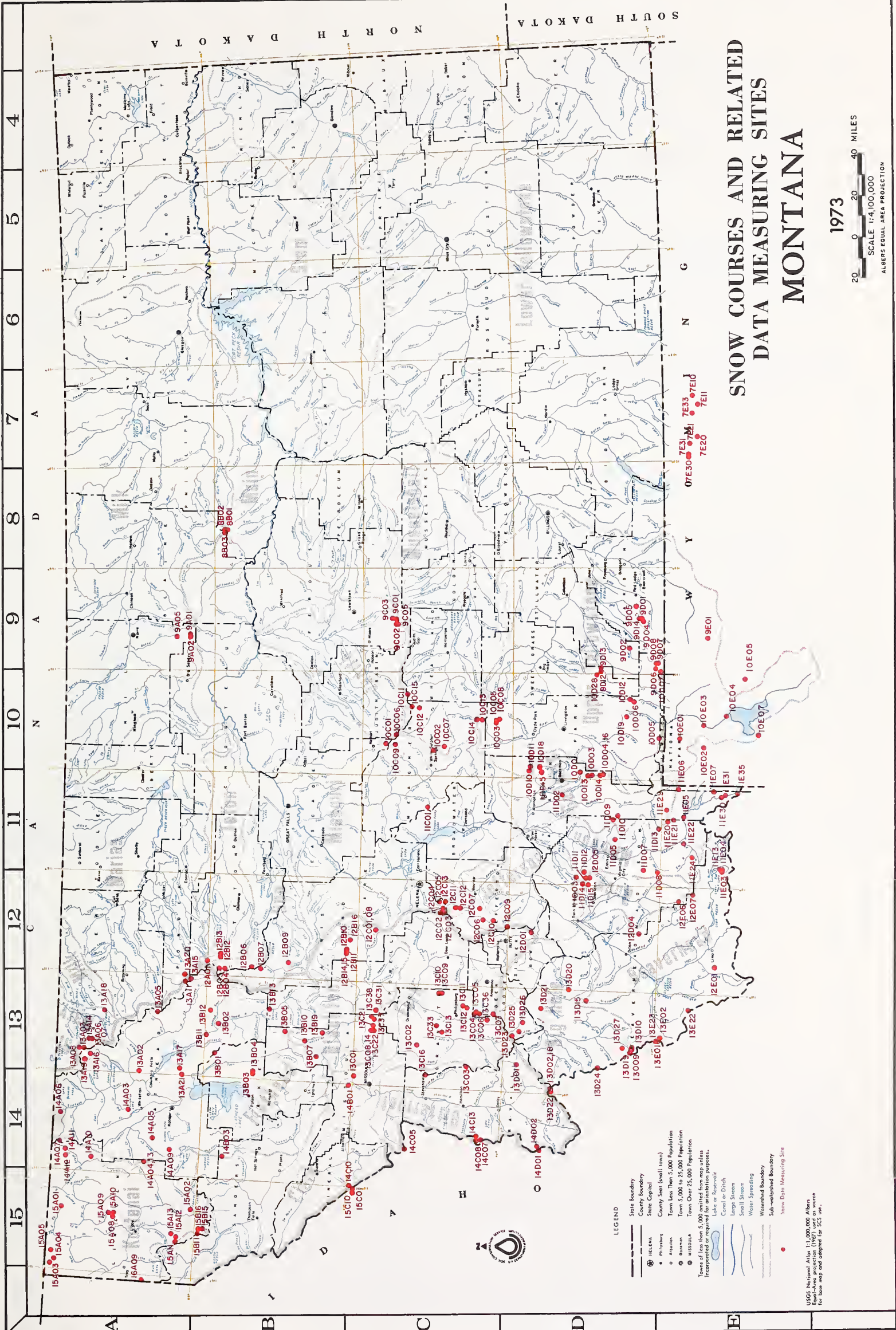
No

Elev.

Drainage

YELLOWSTONE





SNOW COURSES AND RELATED DATA MEASURING SITES MONTANA

1973

20 0 20 40 MILES

SCALE 1:4,100,000

ALBERS EQUAL AREA PROJECTION

- LEGEND**
- State Boundary
 - County Boundary
 - County Seat (small town)
 - City
 - Population
 - Town Less Than 5,000 Population
 - Town 5,000 to 25,000 Population
 - Town Over 25,000 Population
 - Towns of less than 5,000 omitted from map unless incorporated or required for orientation purposes.
 - Lake or Reservoir
 - Canal or Ditch
 - Large Stream
 - Small Stream
 - Water Spreading
 - Watershed Boundary
 - Sub-watershed Boundary
 - Snow Data Measuring Site

USGS National Atlas 1:4,100,000. All other symbols and text are for this map and adopted for SCS use.

INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

| Drainage Basin & Snow Course | Number | Elev. | Sec. | Typ. | Range | Record By 2/ | Measuring Dates 1/ | Heav. By 2/ |
|---|--------|-------|------|------|-------|-----------------|-----------------------|----------------|
| SNOW COURSES | | | | | | | | |
| COLUMBIA RIVER BASIN | | | | | | | | |
| KOOTENAI RIVER | | | | | | | | |
| Bald Eagle Peak | 15A11 | 5700 | 6 | 27N | 31W | 1969 | 3,4,5,5,6 | 1 |
| Barfield Mountain | 15A08 | 5600 | 4 | 32N | 30W | 1969 | 2,3,4,5,5,6 | 2 |
| Barre Highway | 15B11 | 4400 | 36 | 26N | 31W | 1966 | 3,4,5,5,6 | 2 |
| Barre Trail | 15B14 | 4400 | 31 | 26N | 30W | 1966 | 3,4,5,5,6 | 2 |
| Bristow Creek | 15B15 | 3850 | 5 | 25N | 30W | 1965 | 3,4,5,5,6 | 1 |
| Brush Creek | 15A10 | 3900 | 2 | 32N | 30W | 1969 | 3,4,5,5,6 | 1,2 |
| Brush Creek | 14A05 | 5000 | 12 | 30N | 26W | 1969 | 3,4,5,5,6 | 1,2 |
| Brush Creek | 14A06 | 5000 | 12 | 30N | 26W | 1969 | 3,4,5,5,6 | 1,2 |
| Brush Creek | 14A07 | 5000 | 12 | 30N | 26W | 1969 | 3,4,5,5,6 | 1,2 |
| Brush Creek | 14A08 | 5000 | 12 | 30N | 26W | 1969 | 3,4,5,5,6 | 1,2 |
| Cedar Grove | 15A13 | 4100 | 35 | 28N | 31W | 1969 | 3,4,5,5,6 | 1 |
| Cedar Grove | 15A04 | 5400 | 20 | 37N | 32W | 1969 | 3,4,5,5,6 | 1 |
| Gavins Creek | 15A05 | 4300 | 1R | 37N | 32W | 1969 | 3,4,5,5,6 | 1 |
| Gavins Creek | 14A11 | 4300 | 1 | 36N | 25W | 1937 | 3,4,5,5,6 | 1 |
| Hawkins Lake | 15A03 | 6450 | 30 | 37N | 33W | 1969 | 3,4,5,5,6 | 1 |
| Keeler Creek | 15A09 | 3300 | 35 | 30N | 35W | 1969 | 3,4,5,5,6 | 1 |
| Loon Lake | 15A11 | 4800 | 31 | 33N | 29W | 1969 | 3,4,5,5,6 | 1 |
| Loon Lake | 15A12 | 5100 | 3 | 33N | 29W | 1969 | 3,4,5,5,6 | 1 |
| Loon Lake | 15A13 | 5100 | 3 | 33N | 29W | 1969 | 3,4,5,5,6 | 1 |
| Red Mountain | 15A01 | 6000 | 4 | 36N | 29W | 1969 | 3,4,5,5,6 | 2 |
| Stahl Peak | 14A12 | 6050 | 5 | 36N | 25W | 1969 | 3,4,5,5,6 | 1 |
| Measel Divide | 14A07 | 5450 | 20 | 37N | 24W | 1937 | 3,4,5,5,6 | 1 |
| FLATHEAD RIVER | | | | | | | | |
| Flathead | 14B03 | 5150 | 11 | 24N | 25W | 1961 | 3,4,5 | 1,5 |
| Beaver Lake | 13A11 | 6700 | 31 | 28N | 11W | 1964 | 3,4,5 | 1 |
| Big Creek | 13B02 | 6750 | 7 | 22N | 18W | 1941 | 3,4,5 | 6 |
| Camp Moberly | 13A17 | 6400 | 30 | 28N | 18W | 1962 | 3,4,5 | 1,2 |
| Camp Moberly | 13B04 | 6400 | 30 | 28N | 18W | 1962 | 3,4,5 | 6 |
| Camp Moberly | 13B06 | 6500 | 8 | 28N | 18W | 1962 | 3,4,5 | 6 |
| Clifton Mountain | 13A19 | 6300 | 12 | 25N | 18W | 1968 | 3,4,5 | 1 |
| Clifton Creek | 14A09 | 5150 | 11 | 28N | 25W | 1960 | 3,4,5 | 1,6 |
| Onsight Lake | 13B12 | 6300 | 30 | 28N | 13W | 1964 | 3,4,5 | 2 |
| Hell Roaring Divide | 14B03 | 5770 | 35 | 32N | 22W | 1942 | 1,2,3,4,5,5,6 | 1 |
| Kishinoue | 14A06 | 3890 | 16 | 37N | 22W | 1954 | 3,4,5 | 1 |
| Logan Creek | 14A05 | 4200 | 34 | 30N | 24W | 1937 | 3,4,5 | 1,2 |
| Marina Pass | 13A05 | 5250 | 34 | 30N | 14W | 1934 | 1,2,3,4,5 | 1 |
| Mineral Pass | 13A16 | 4000 | 29 | 35N | 17W | 1957 | 3,4,5 | 6 |
| Notley Creek | 13A21 | 3600 | 35 | 28N | 19W | 1970 | 3,4,5 | 1,2 |
| Notley Creek | 13A22 | 3600 | 35 | 28N | 19W | 1970 | 3,4,5 | 1,2 |
| Spotlight Peak Mountain | 13B02 | 7000 | 23 | 25N | 15W | 1968 | 1,2,3,4,5,5,6 | 1 |
| Trinius Lake | 13B01 | 6100 | 9 | 25N | 17W | 1948 | 3,4,5 | 1 |
| Trinius Creek | 13B11 | 3580 | 25 | 28N | 16W | 1951 | 1,2,3,4,5 | 1 |
| Upper Holland Lake | 13B05 | 6200 | 28 | 20N | 15W | 1948 | 3,4,5 | 1 |
| CLARK FORK RIVER | | | | | | | | |
| Combination | 13C13 | 7100 | 26 | 8N | 15W | 1959 | 1,2,3,4,5,5,6 | 1 |
| Copper Bottom | 12B14 | 5200 | 15 | 5N | 8W | 1971 | 1,2,3,4,5 | 1,2 |
| Copper Camp | 12B16 | 6950 | 3 | 15N | 9W | 1971 | 3,4,5 | 1,2 |
| Copper Lake | 12B10 | 5700 | 1 | 15N | 9W | 1962 | 3,4,5 | 1,2 |
| Copper Lake Creek | 12B15 | 6100 | 2 | 15N | 9W | 1971 | 3,4,5 | 1,2 |
| Copper Lake | 12B16 | 6100 | 2 | 15N | 9W | 1971 | 3,4,5 | 1,2 |
| Copper Lake | 13B10 | 4200 | 12 | 18N | 16W | 1967 | 1,2,3,4,5 | 1,2 |
| El Dorado Mine | 13C09 | 7800 | 23 | 8N | 12W | 1949 | 3,4 | 1 |
| Fraser Burr Pass | 13C11 | 8000 | 12 | 6N | 13W | 1957 | 3,4,5 | 1 |
| Gold Creek Lake | 13C10 | 7200 | 14 | 6N | 12W | 1949 | 3,4 | 1 |
| Hart Lake Trail | 14C10 | 4800 | 11 | 14W | 27W | 1965 | 1,2,3,4,5,5,6 | 1,2 |
| Hart Lake | 14C11 | 4800 | 11 | 14W | 27W | 1965 | 1,2,3,4,5,5,6 | 1,2 |
| Hoodoo Creek | 13C12 | 5900 | 16 | 14W | 27W | 1937 | 1,2,3,4,5,5,6 | 1,2 |
| Intergrade | 13C04 | 6450 | 6 | 5N | 13W | 1936 | 2,2,4,5 | 4 |
| Librecht Flume | 13C08 | 6400 | 13 | 5N | 14W | 1971 | 1,2,2,4,5 | 1 |
| Librecht Forest No. 3 | 13C21 | 5450 | 19 | 13N | 14W | 1951 | 1,2,4,5 | 8 |
| Librecht Forest No. 4 | 13C22 | 4850 | 23 | 13N | 15W | 1951 | 1,2,4,5 | 8 |
| Librecht Forest No. 6 | 13C23 | 4850 | 23 | 13N | 15W | 1951 | 1,2,4,5 | 8 |
| Librecht Forest No. 7 | 13C24 | 4850 | 23 | 13N | 15W | 1951 | 1,2,4,5 | 8 |
| Librecht Fork | 13C27 | 4200 | 22 | 13N | 14W | 1971 | 1,2,4,5 | 8 |
| North Fork Elk Creek | 13C31 | 6250 | 20 | 13N | 13W | 1968 | 1,2,2,4,5,5,6 | 8 |
| Pearson Meadows | 13C36 | 7200 | 2 | 4N | 14W | 1971 | 1,2,2,4,5 | 1 |
| Red Lion | 13C12 | 7100 | 22 | 6N | 13W | 1958 | 3,4,5 | 1 |
| Shalaho Summit | 13C03 | 6800 | 30 | 6N | 17W | 1937 | 3,4,5,5,6 | 1 |
| Southern Cross | 13C05 | 6500 | 8 | 5N | 13W | 1936 | 2,2,4,5 | 4 |
| Storm Lake | 13C07 | 7800 | 19 | 5N | 13W | 1936 | 1,2,2,4,5 | 1 |
| Stuart Mill | 13C06 | 6500 | 19 | 5N | 13W | 1936 | 2,2,4 | 4 |
| Stuart Mountain | 13C01 | 7400 | 6 | 14N | 18W | 1936 | 3,4,5,5,6 | 8 |
| Y Mountain | 14C01 | 6800 | 33 | 15N | 19W | 1956 | 1,2,2,4,5,5,6 | 8 |
| BITTERROOT RIVER | | | | | | | | |
| Adobee | 13C16 | 6440 | 28 | 9N | 18W | 1940 | 3,4,5 | 1 |
| East Fork R. S. | 13C02 | 5400 | 16 | 23 | 17W | 1937 | 3,4 | 1 |
| Gibbons Pass | 13C02 | 7100 | 4 | 23 | 19W | 1934 | 1,2,2,4,5,5,6 | 1,3 |
| Loat Horse | 14C07 | 5940 | 5 | 18N | 23W | 1960 | 3,4,5,5,6 | 1 |
| Max Perce Camp | 14C02 | 4510 | 25 | 15N | 26W | 1937 | 3,4,5 | 1 |
| Max Perce Camp | 14C03 | 4510 | 25 | 15N | 26W | 1937 | 3,4,5 | 1 |
| Saddle Mountain | 13C02 | 7840 | 5 | 25 | 19W | 1965 | 1,2,2,4,5,5,6 | 1 |
| Twelvemile Creek | 14C13 | 5600 | 34 | 5S | 23W | 1968 | 1,2,2,4,5,5,6 | 1 |
| Pin Lake | 14C08 | 6510 | 32 | 5N | 23W | 1960 | 1,2,2,4,5,5,6 | 1 |
| HUDSON BAY BASIN | | | | | | | | |
| LEGEND | | | | | | | | |
| 1/ Numerals 1,2,3,4,5,6 refer to January 1, February 1, March 1, April 1, May 1, May 15, and June 1 | | | | | | | | |

Agencies and Organizations Cooperating in Montana Snow Surveys

GOVERNMENT AGENCIES

Canada:

Water Survey of Canada, Calgary, Department of the
Environment
Water Resources Service, Department of Lands, Forests
and Water Resources, British Columbia

Federal:

Department of the Army
Corps of Engineers
U.S. Department of Agriculture
Forest Service
Soil Conservation Service
U.S. Department of Commerce
NOAA, National Weather Service
U.S. Department of the Interior
Bonneville Power Administration
Bureau of Indian Affairs
Bureau of Reclamation
Bureau of Sports Fisheries and Wildlife
Geological Survey
National Park Service

STATE

Montana Conservation Districts
Montana Department of Fish and Game
Montana Department of Natural Resources and
Conservation
Montana Water Resources Board
Montana State University - Agricultural Experiment
Station
North Montana Branch Station - Agricultural
Experiment Station
University of Montana - School of Forestry

PRIVATE

Montana Power Company

Other organizations and individuals furnish valuable
information for snow survey reports. Their cooperation
is gratefully acknowledged.

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with the Snow Survey"*